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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,908	02/28/2002	Sven Pedersen	6001.204-US	5914

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EXAMINER
PRATS, FRANCISCO CHANDLER

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,908	PEDERSEN ET AL.	
	Examiner	Art Unit	
	Francisco C Prats	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 28-48 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 28-48 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The preliminary amendment filed February 28, 2002, has been received and entered.

Claims 1-27 have been cancelled.

Claims 28-48 are pending and are examined on the merits.

Information Disclosure Statement

It appears that no PTO-Form 1449 was filed with the information disclosure statement received February 28, 2002. However, copies of the references were in fact received and considered. The documents cited on the transmittal cover sheet of said information disclosure statement have therefore been cited on the PTO-Form 892 attached hereto.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 42-46 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Chiu (U.S. Pat. 4,977,252).

The reference discloses a product which appears to be identical to the presently claimed product, based on the fact that the prior art product is produced by the action of β-amylase on a starch which may be derivatized with lipophilic moieties such as the claimed octenyl succinate substituent. See, e.g., Example 1, at columns 9 and 10. Note Chiu's discussion of the utility of the enzyme-digested product as

emulsifiers for flavorings used in beverages. See column 1, lines 8-15. Because applicant's claimed enzyme acts on starch to produce maltose in the same manner as the prior art β-amylase, the product resulting from action of the prior art enzyme must be the same as the product resulting from the action on the same substrate as the claimed enzyme. Consequently, the claimed product appears to be anticipated by the reference.

However, even if the reference product and the claimed product are not one and the same and there is, in fact, no anticipation, the reference product would, nevertheless, have rendered the claimed product obvious to one of ordinary skill in the art at the time the claimed invention was made in view of the fact that both the claimed and prior art enzymes have maltogenic activity, and any differences between the products would be those expected due to variations in process parameters. Thus the claimed invention as a whole was clearly *prima facie* obvious especially in the absence of sufficient, clear, and convincing evidence to the contrary.

Regarding the propriety of this type of alternative rejection, MPEP § 2113 states that:

> . . . [w]hen the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is

> eminently fair and acceptable. As a practical matter, the Patent and Trademark Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith. *In re Brown*, 59 CCPA 1063, 173 USPQ 685 (1972).
>
> MPEP § 2113 also clearly states that
>
> 'The Patent Office bears a lesser burden of proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature' than when a product is claimed in the conventional fashion. *In re Fessmann*, 180 USPQ 324 (CCPA 1974)."

Claims 28-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu (U.S. Pat. 4,977,252) in view of Outtrup (EP 0 120 693).

As discussed above, Chiu discloses a product, useful in the emulsification of flavoring agents for beverages, said product being made by the action of β-amylase on a starch which may be derivatized with lipophilic moieties such as the claimed octenyl succinate substituent. See, e.g., Example 1, at columns 9 and 10. Note specifically that Chiu discloses that the enzymatic digestion step may be performed before or after derivatization (see, e.g., column 5, lines 59-60) as recited in applicant's claims, and that the starch may be derivatized with a hydrophilic moiety (see, e.g. column 5, lines 60-62), as also recited in applicant's claims. Chiu differs from applicant's

claims in not using the maltogenic amylase recited in the claims.

However, Outtrup clearly discloses that applicant's claimed maltogenic amylase has the same ability to remove maltose from starch as prior art β-amylase, and is useful in applications where prior art β-amylases are useful. See pages 7 and 8. Moreover, Outtrup also discloses that applicant's claimed maltogenic amylase is active at higher temperatures than other β-amylases, thereby providing the advantages of avoiding retrogradation and microbial infections during hyrolysis procedures. See pages 2 and 3. Thus, the artisan of ordinary skill practicing Chui's process clearly would have been motivated by the disclosed advantages of Outtrup's enzyme to have substituted Outtrup's maltogenic amylase for the β-amylase used by Chiu. Applicant's claimed substitution of Outtrup's enzyme for Chui's enzyme must therefore be considered obvious under § 103(a).

Claims 28, 37, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu (U.S. Pat. 4,977,252) in view of Outtrup (EP 0 120 693), and in further view of Eden (U.S. Pat. 5,688,845).

As discussed above, Chiu, when taken in view of Outtrup, renders obvious the process recited in claims 28 and 37. However, neither Chiu nor Outtrup discloses the use of products such as those disclosed by Chiu in paper applications, as recited in claims 47 and 48. However, Eden clearly discloses that hydrophilically derivatized starches (column 5, lines 9-14), which may be digested with β-amylase (column 7, lines 54-58), are suitable for use as adhesives in paper applications (column 1, lines 8-19). Thus, the artisan of ordinary skill, recognizing from Eden the suitability in of β-amylase-digested, derivatized starches in paper adhesive applications, clearly would have been motivated to have used the derivatized starches produced according to the disclosures of Chiu and Outtrup in such applications. A holding of obviousness is therefore required.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C Prats whose telephone number is 703-308-3665. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Wityshyn can be reached on 703-308-4743. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Francisco C Prats
Primary Examiner
Art Unit 1651

FCP